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ABSTRACT

A decline in student performance on the Scholastic Aptitude Test, the Achievement Tests, the American College Test, and the Preliminary Scholastic Aptitude Test has been observed nationally since the mid 1960's and evidence indicates that very similar trends have occurred in Massachusetts. Score declines have occurred in public, private, and parochial schools and in urban, suburban, and rural communities. Various explanations for the score decline have been proposed, some have been confirmed, some disconfirmed, and some remain doubtful. The equated score scale appears to remain stable, but there have been some changes in test content. Changes in the characteristics of the applicant group since 1971 appear not to have had any significant effect. School related factors, such as student motivation and curricular offerings, may have had some effect. The effects of changes in the social and cultural context within which the educational system operates are difficult to evaluate. Although changes in student motivation, course enrollment, and school curriculum are speculated to be major contributors to the decline, it cannot be attributed to one set of factors. Further research is recommended. (CTM)

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**DECLINING
TEST SCORES
a state study**

By
JANICE J. WEINMAN

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SUMMARY OF FINDINGS

Over the past few years, there has been growing concern over the decline in student performance on national achievement tests. While a number of hypotheses have been put forth to explain the score decline, few definite conclusions have been drawn to explain the situation. In order to more explicitly examine the reasons for the drop in student achievement on standardized tests, the Massachusetts Department of Education conducted its own research on the subject. The study was performed for two reasons. First, to determine specific patterns unique to the Commonwealth and thereby suggest relevant local policy directions; and secondly, to contribute to the general body of knowledge on the issue.

The report begins with an overview of recent test score trends in the nation as a whole. This overview confirms national research which indicates that the results on most standardized tests-- whether for college admissions, to determine general achievement, or to assess educational progress-- have been declining since the mid 1960's.

The national overview is followed by an examination of test score patterns in Massachusetts and a comparison of state and national trends. This examination shows that the score decline in Massachusetts bears great resemblance to nationwide patterns. Furthermore, Massachusetts data shows that the score decline in the Commonwealth affects schools in all kinds of communities (urban, industrial suburbs, residential suburbs, and small towns) and of all types (public, private and parochial).

The remainder of the study analyzes a number of explanations of the decline. In examining these hypotheses, the national response is presented and then available Massachusetts data to support or negate national explanations is provided.

The first possible explanation for the test score decline which is discussed concerns possible effects of changes in scaling and content of the tests themselves. Testing experts throughout the country feel strongly that factors inherent to the test do not account for the downward trend in performance. Massachusetts research confirms that little of the test score decline can be explained by structural or technical changes in the exams themselves. However, interviews with students and educators throughout the Commonwealth indicate that many Massachusetts citizens consider the diminished relevance of the material on standardized exams to be contributing to the test score decline.

The second hypothesis which is considered focuses on the effects of changes in the pool of students taking the test. Many of those observing the decline suggest that possible shifts in the number and type of students taking standardized exams might be contributing to the score decline. Massachusetts data indicates that none of the factors examined-- size of the test-taking pool, male/female ratio, students' academic standing or their grade-point average, number of junior/senior year test repeaters, or post-secondary school aspirations-- have significantly changed over the past years. The absence of any significant trend in the size and composition of the test-taking pool suggests that the drop in the average test scores is not a result of the characteristics of the student population taking the examinations.

The report then explores the extent to which school-related factors as student motivation and attitudes, curricular offerings and course enrollments, teacher background, and attendance rates may be contributing to a decline in student achievement levels and hence performance on standardized tests. Interviews with college admission officers and high school guidance counselors throughout Massachusetts and close examination of college catalogues indicate that achievement on standardized tests has become less important as a criterion for college admission-- that it "helps to complete the picture," rather than paint the basic profile of an applicant. This, in turn, seems to have affected student motivation toward the exams: they appear less concerned about how well they perform and consequently exert less effort when taking the tests.

In addition, an analysis of high school enrollment patterns indicates a decline in traditional courses with a simultaneous increase in specialized electives. This is accompanied by a shift in emphasis from basic communication skills to fostering creativity, decision-making and inter-personal relationships in traditional courses. Both these trends seem to be creating a growing discrepancy between what students are learning and what standardized tests are examining. This discrepancy is exhibited in a clear relationship between increased enrollment in specialized electives and rate of test score decline among the Massachusetts school examined.

A final set of hypotheses that has been raised to explain the score decline centers around the social and cultural context within which the educational system operates. Among the general societal changes that have been conjectured as affecting education are: the expanded role of the electronic media, and especially television; the increased use of alcohol and drugs by students; the social upheaval of the 1960's, and its impact on students' attitudes; and the increased number of younger siblings taking standardized tests during the past decade. Massachusetts research indicates that although such factors as drugs, alcohol and television are difficult to diagnose and remedy, they must be acknowledged as having an effect on student attitudes and behavior and possibly on how they perform on standardized tests.

CHAPTER I

INTRODUCTION

During the past few years, there has been a growing concern at the national, state and local educational levels over the results of standardized achievement tests. Recent trends on such nationally administered exams as the Scholastic Aptitude Test (SAT), American College Testing Program (ACT) and the Iowa Test of Basic Skills (ITBS) indicate a continuous drop in student performance levels. For example, since 1963, the average score on the verbal component of the SAT has dropped 44 points and the average score on the mathematics section has declined by 30 points. These trends have generated much controversy among educators and extensive discussion in the media as to the causes and implications of the apparent decrease in student achievement and aptitude.¹

A number of hypotheses have been put forth as reasons for the score decline. However, as the National Institute of Education (NIE) has indicated, the data that is available to test these hypotheses "is widely scattered and there has been little empirical research to support" many of them.² In response to the limited understanding of the causes of the score decline, the College Entrance Examination Board (CEEB), which administers the SAT, has appointed a special panel to assess a number of possible explanations. This panel, which includes some of the nation's leading psychometric and measurement experts as well as educational administrators and researchers, will spend two years studying the SAT decline.

Concern among educators, parents and students over declines on the SAT and other standardized achievement tests also prompted the Massachusetts State Department of Education to conduct a research study on the extent and causes of this phenomenon. This report presents the findings of this study, the only one on declining test scores that has been completed by a state education agency. The focus of the study is on test score trends in Massachusetts, with particular emphasis on the SAT, the most widely administered standardized exam for which trend data was readily available.

The Massachusetts Department of Education initiated its own research on this subject for two basic reasons. First, to determine specific patterns unique to the Commonwealth and thereby suggest relevant local policy suggestions, and secondly, to contribute to the general body of knowledge on the issue.

In attempting to formulate solutions to test score declines, local schools and districts require data relevant to their specific conditions. It was felt, therefore, that an analysis of local data, already available at the state level or obtainable from school systems, would provide insights into the causes of test score decline not readily discernible from a national perspective. Hence, the first major aim of the study was to examine the congruity between state and national patterns. This would help school systems determine whether national conclusions represented trends in the Commonwealth and whether general recommendations could be applied to local educational planning.

The study also attempted to demonstrate the value of conducting research concerning a national issue at the state level. A state department of education, because of its administrative relationship and proximate rapport with local districts, can more readily gather a broader range of information from school personnel and students both on actual and perceived conditions than can national agencies. Thus, a research study on the state level of a national issue can contribute to the general analysis by providing more sensitive and comprehensive data which can then be used to validate generalized conclusions. The second major purpose of the study then was to examine more closely and intensively conditions on score decline. This information can consequently be used to help better understand at the national and local level causes and implications of the apparent decline in student performance.

Most of the data gathered and analyzed for this study was secondary rather than primary. That is, it drew from data compiled by, and available from, the New England Regional Office of the College Entrance Examination Board, from several Massachusetts colleges and universities, as well as from information previously compiled by the Massachusetts Department of Education. Some primary data was also collected. This was obtained from case studies of a sample of high schools in Massachusetts through interviews held with principals, department heads, guidance counselors and students.

The report begins with an overview of recent test score trends in the nation as a whole (Chapter II). This overview is followed

by a discussion of test score patterns in Massachusetts and a comparison of state and national trends (Chapter III). This section will include a breakdown of state SAT trends by different types of schools (public, private and parochial). The remainder of the study will analyze a number of hypotheses for the decline (Chapters IV-VII). In discussing these hypotheses, the national response to them will be presented; this will be followed by an analysis of available Massachusetts data that supports or negates the various explanations. These hypotheses have been grouped into four areas:

1. those that center on changes in the content and structure of the exams;
2. those relating to changes in the test-taking population;
3. those that focus on trends in such school-related factors as curricular, staff and student characteristics;
4. those relating to changes in the social and cultural context of society that may influence the educational system.

The report will conclude with several overall observations on the extent, causes, and policy implications of the test score decline (Chapter VIII).

Notes - Chapter 1

1. See for example
 - Albert Shanker, "Where We Stand: Enrollments Drop In Tough Courses and College Entrance Scores Decline", New York Times, March 14, 1976.
 - Fred Hechinger, "SAT Scores: What Happened to the Best and the Brightest?", Saturday Review, February 9, 1974.
 - "Why Johnny Can't Write", Newsweek, December 8, 1975.
2. National Institute of Education, "Declining Test Scores: A Conference Report", Washington, D.C.: June 1975, p. 7.

CHAPTER II

OVERVIEW OF NATIONAL TEST SCORE TRENDS

A number of tests have been administered nationally over the past few years which indicate similar patterns in student performance. The College Entrance Examination Board administers the Scholastic Aptitude Tests, the Achievement tests and the Preliminary Aptitude Test. In addition other testing organizations, national agencies and individual states give a variety of tests to determine achievement. The nature of these tests and the national patterns of student performance on them are described in this Chapter.

A. Tests Administered by the College Entrance Examination Board

1. Scholastic Aptitude Test (SAT)

The Scholastic Aptitude Test (SAT) is the most widely administered college admissions exam in the United States. Designed and scored for the College Entrance Examination Board (CEEB) by the Educational Testing Service (ETS), the SAT is a two-and-one-half hour test. It consists of separate verbal and mathematical components, each of which is scored on a scale of 200 to 800. The verbal section of the SAT includes reading comprehension questions, analogies, and antonyms; the mathematical section includes questions requiring the use of the four basic arithmetic operations, as well as exercises testing concepts in elementary algebra, geometry, and the properties of integers.

The SAT mathematical and verbal scores are reported to the student, the student's high school, and to any colleges the student designates as a

recipient. The purpose of the test, as stated by the CEEB, is "to supplement the secondary school record and other information about the student in assessing competence for college work." ¹ The exam is taken by high school juniors and seniors planning to apply to a college or university.

a. SAT Verbal Exam

As Table II-1 indicates, the average SAT verbal score, for all "college-bound" seniors nationwide, has dropped from 478 in 1962-63, to 434 in the 1974-75 school year, a drop of 44 points or 9.2%. This decrease has been continuous, with the largest drop occurring between 1973-74 and 1974-75, when the average scores declined by 10 points.

b. SAT Mathematical Exam

As Table II-2 indicates, the average SAT mathematical score for college-bound seniors has also dropped steadily since 1962-63. The decline of 30 points, from 502 to 472, has constituted a drop of 6.0%. While the averages on the Math SAT has been consistently higher than those on the verbal test, a graph of these averages (see Figure II-1) shows that the rate of score decline has been quite similar on both parts of the SAT.

2. Achievement Tests

The CEEB also administers a series of one-hour Achievement Tests in 15 academic subjects. These tests, which are also taken by college-bound juniors and seniors, are scored like the SAT on a 200-800 scale. They are

TABLE II-1

MEAN SAT VERBAL TEST SCORES FOR COLLEGE-BOUND SENIORS, NATIONALLY:
1962-63 TO 1974-75

Year	Male	Female	Total
1962-63			478
1963-64			475
1964-65			473
1965-66			471
1966-67	463	468	466
1967-68	464	466	466
1968-69	459	466	463
1969-70	459	461	460
1970-71	454	457	455
1971-72	454	452	453
1972-73	446	443	445
1973-74	447	442	444
1974-75	437	431	434

Note: The figures from 1962-63 to 1965-66 are based on the scores for the total group that took the exam. Since 1966-67, the data is compiled from all seniors' scores from a given year (e.g. 1974-75) plus all the junior scores from the year before (e.g. 1973-74) who did not retake the SAT as a senior. If an individual student took the exam more than once, only the latest score for that student was counted. The term "college-bound senior," which is utilized by the College Entrance Examination Board (CEEB), is somewhat of a misnomer since not all of the students who take the SAT attend an institution of higher education. The average scores include both students from public and private schools.

Source: College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

TABLE II-2

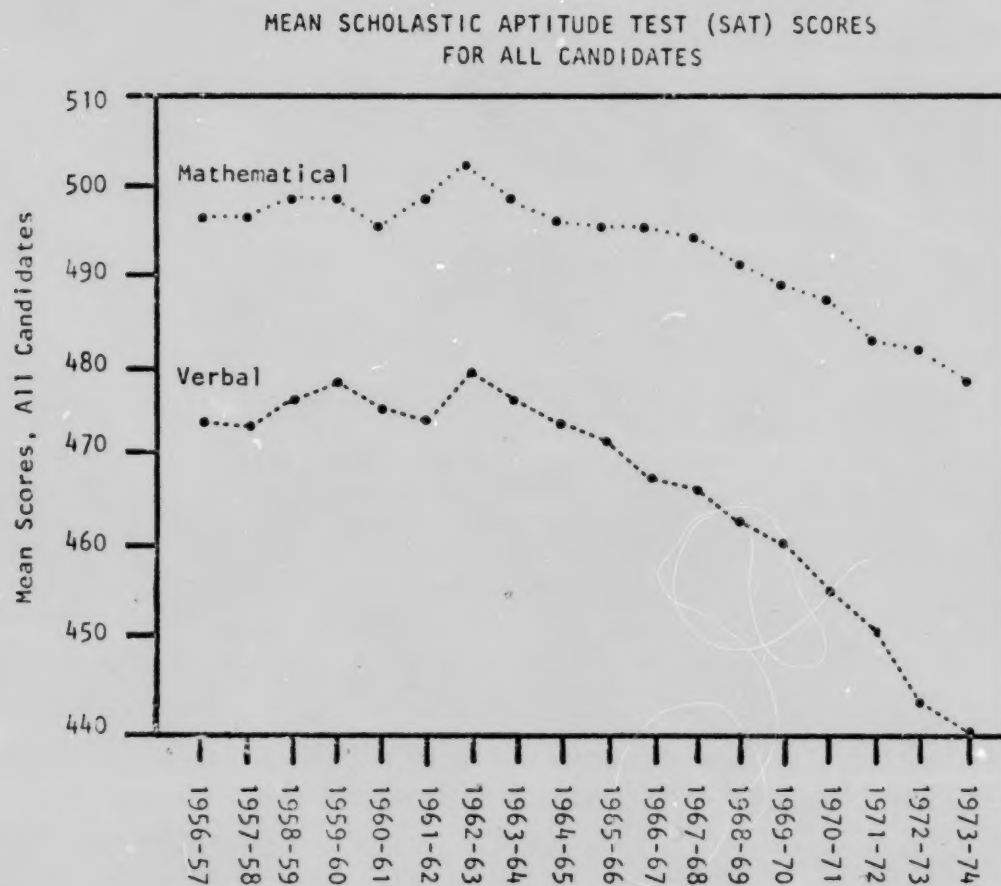
MEAN SAT MATHEMATICAL TEST SCORES FOR COLLEGE-BOUND SENIORS, NATIONALLY:
1962-63 TO 1974-75

Year	Male	Female	Total
1962-63	N.A.	N.A.	502
1963-64	N.A.	N.A.	498
1964-65	N.A.	N.A.	496
1965-66	N.A.	N.A.	496
1966-67	514	467	492
1967-68	512	470	492
1968-69	513	470	493
1969-70	507	465	488
1970-71	507	466	488
1971-72	505	461	484
1972-73	502	460	481
1973-74	501	459	480
1974-75	495	449	472

Note: N.A. indicates information not available

Source: College-Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

FIGURE II-1



Source: College Entrance Examination Board, New York, New York

used to determine a student's level of competence in specific subject areas and to assist in predicting the level of that student's college performance. Table II-3 presents CEEB Achievement Test score trends nationally since 1971-72. Unlike the SAT verbal and mathematical scores, the averages on all Achievement Tests have increased 5 points during this period (from 526 to 531).

3. The Preliminary Scholastic Aptitude Test (PSAT)

The Preliminary Scholastic Aptitude Test (PSAT) is a test similar to the SAT, administered in the fall of each year to high school juniors around the country. It serves as a practice exam for the SAT; since 1971-72, it has also served as the basis for National Merit Scholarship awards, replacing the National Merit Scholarship Qualifying Test. The PSAT is scored on a scale of 20 to 80, corresponding to the SAT scale of 200 to 800. Table II-4 shows recent national PSAT mean scores. Whereas the SAT scores showed a marked decline over this period, there is no single trend in the PSAT scores. Scores have both risen and fallen since 1971-72. Overall, the PSAT verbal scores have dropped slightly while the PSAT math scores have increased slightly.

B. Other Tests

1. American College Testing Program (ACT)

The American College Test (ACT) is the second most widely-administered college admissions exam in the United States. The ACT consists of a battery of four tests: English, Mathematics, Social Studies and Natural Science. Each test is scored on a scale of 1 to 36. As Table II-5 indicates, the average scores on the English, Mathematics and Social Studies tests have declined since 1964-65. However, the average scores on the Natural Science

TABLE II-3
ACHIEVEMENT TEST SCORE AVERAGES, NATIONALLY:
1971-72 TO 1974-75

Year	Average For All Achievement Tests	English Composition	Math Level I	American History and Social Studies	Literature	Biology	Chemistry	French	Spanish
1971-72	526	516	541	492	N.A.	535	568	539	530
1972-73	527	517	537	498	N.A.	532	572	544	539
1973-74	533	517	545	498	N.A.	545	581	560	560
1974-75	531	515	545	494	522	544	569	553	544

Note: N.A. indicates information not available

Source: College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

TABLE II-4
PSAT MEAN SCORES, NATIONALLY;
1971-72 TO 1975-76

Year	PSAT Verbal	PSAT Math
1971-72	42.2	45.2
1972-73	42.7	46.9
1973-74	41.8	45.2
1974-75	41.6	45.9
1975-76	41.1	45.5

Source: College Entrance Examination Board, New England Regional Office, 1976

TABLE II - 5

MEAN ACT TEST SCORES, NATIONALLY:
1964-65 TO 1973-74

Year	ACT English	ACT Math	ACT Social Studies	ACT Natural Sciences	ACT Composite
1964-65	18.7	19.6	20.6	20.4	19.9
1965-66	19.1	19.5	20.5	20.5	20.0
1966-67	18.5	18.7	19.6	20.1	19.4
1967-68	18.1	18.3	19.4	19.8	19.0
1968-69	18.4	19.2	19.4	20.0	19.4
1969-70	18.1	19.5	19.3	20.5	19.5
1970-71	17.7	18.7	18.3	20.2	18.9
1971-72	17.6	18.6	18.4	20.3	18.8
1972-73	17.8	18.8	18.1	20.5	19.9
1973-74	17.6	18.1	17.9	20.6	18.7

Source: Leo Munday, Declining Admissions Test Scores, American College Testing Program, 1976

test have increased slightly during this period. The composite mean score on all four exams has declined from 20.0 in 1965-66, to 18.7 in 1973-74, a drop of 6.5%. The average scores on the ACT English test have dropped by 7.8% as compared to the decline of 9.2% on the SAT verbal exam. In mathematics, the drop on the ACT has been 5.1% as compared to 6.0% on the SAT.² Thus, the rate of score decline on both the ACT and SAT are similar.

2. Minnesota SAT and Iowa Test of Basic Skills

The Minnesota Scholastic Aptitude Test (MSAT), which is given to 90% of Minnesota's high school juniors, had a history of rising mean scores up to the mid-1960's. Since that time, there has been a sharp decline in the MSAT test results. Likewise, the scores on the Iowa Test of Basic Skills (ITBS) for elementary grade students in Iowa showed a general increase in performance levels up to 1965, and a decrease over the last decade. On the ITBS, the score decline has been most pronounced among higher grades (5th-8th), while students in earlier grades (3rd and 4th) have experienced only a slight decline.

3. Graduate Record Examination (GRE)

The Graduate Record Examination (GRE), which is taken by college seniors seeking admission to various graduate programs, has shown a general downward trend in both the verbal and mathematics mean scores. The mean verbal score fell from 530 in 1965 to 495 in 1974; the mathematics score dropped from 530 to 510 over the same period. Interestingly, the advanced achievement tests which supplement the GRE verbal and math

components have also shown declines, a trend opposite to that of the high school achievement scores.

4. National Assessment of Educational Progress (NAEP)

The National Assessment of Educational Progress (NAEP) is a federally funded project which tests representative groups of 9 and 17 year old students throughout the country. The purpose of NAEP is to gather base-line data on educational progress in the country as a whole and in different regions in the following subject areas: reading, mathematics, writing, science, social studies, citizenship, art, literature and music.

While improvement has been demonstrated in some areas, such as reading, many of the subjects assessed (including writing and science) have shown score declines over the past few years. As with the Iowa Basic Skills Test, this trend has been less severe among the younger group of students tested.

5. Statewide Testing Programs

Finally, a study by Frank Armbruster of the Hudson Institute, which was done for the U.S. Office of Economic Opportunity to assess American primary and secondary educational process, shows declines in scores of several statewide testing programs.³ These included testing programs in Hawaii (Grade 10, 1965-73); Ohio (Grade 10, 1968-70); South Dakota (Grade 9, 1965-69); and New York (Grades 6 and 9, 1966-73).

DISCUSSION

Overall, we find that the results on most standardized tests - whether for college admissions, to determine general achievement or to assess educational

progress - have been declining since the mid-1960's. These declines have been continuous and have appeared at all grade levels (from the elementary school years through college). These trends indicate that the declining-test score phenomenon is widespread and warrants the attention and concern it has received. As Frank Armbruster has written, "a well-known rule of thumb from the field of statistical quality control asserts that seven consecutive drops in a trend probably means that the process under observation is out of control".⁴ Since the SAT has been declining for twelve consecutive years, Armbruster further contends that "it is statistically valid to claim that the drop in SAT scores is significant and that there is some assignable cause that accounts for the drop".⁵ This study will examine some of the factors which might possibly be causing test score declines, particularly as they manifest themselves on the SAT exam.

Notes - Chapter 2

1. College Entrance Examination Board, Guide For High Schools and Colleges, 1975-76 Admissions Testing Program of the College Entrance Examination Board, New York: CEEB, 1975, p. 2.
2. Leo A. Munday, Director of Research at ACT, has indicated that if one compares the drop on the ACT and SAT as a percent of a standard deviation, the rate of decline is quite comparable. See Leo A. Munday, Declining Admissions Test Scores, ACT Research Report #71, Iowa City, Iowa: American College Testing Program, 1976, p. 1.
3. Frank Armbruster, The U.S. Primary and Secondary Educational Process, Croton-on-Hudson, N.Y., Hudson Institute, 1975, pp. 65-68.
4. Armbruster, Op. Cit., p. 71.
5. Ibid.

CHAPTER III

MASSACHUSETTS TEST SCORE TRENDS

While national patterns indicate overall score declines on all types of tests administered, it is important to examine the way in which local conditions parallel national trends. The comparative data of one state presented in this Chapter is meant to provide a case study of the relationship between general and more specific patterns on the SAT and other CEEB examinations.

A. Statewide Patterns

The SAT score trends in Massachusetts from 1971-72 to 1974-75, are virtually identical to the national pattern. As seen in Table III-1, the mean verbal scores for the nation and for Massachusetts both dropped 19 points (from 453 to 434), a decline of 4.2%. Similarly, Table III-2 shows that the mathematical scores declined 12 points nationally (a drop of 2.5%) and 11 points in Massachusetts (a drop of 2.3%). The only difference between the state and national trend is that the average math scores among Massachusetts students have consistently been 3-4 points below the national average.

The Massachusetts mean score for all Achievement Tests (Table III-3) rose during this period, from 495 to 504, but remained considerably lower than the national mean Achievement Test score, which rose over the same period from 526 to 531. Massachusetts scores on the PSAT, like the national scores, seem to show a slight decline from 1971-72 to 1974-75; but in both cases, the decline is less pronounced than that of the SAT (Table III-4).

TABLE III-1

AVERAGE SAT VERBAL TEST SCORES, NATIONAL AND MASSACHUSETTS
1971-72 TO 1974-75

Year	National	Massachusetts
1971-72	453	453
1972-73	445	444
1973-74	444	445
1974-75	434	434

Source: College-Bound Seniors, 1974-75, College Entrance Examination Board, 1975

Massachusetts College Bound Seniors, 1971-72 College Entrance Examination Bd., '72
Massachusetts College Bound Seniors, 1972-73 College Entrance Examination Bd., '73
Massachusetts College Bound Seniors, 1973-74 College Entrance Examination Bd., '74
Massachusetts College Bound Seniors, 1974-75 College Entrance Examination Bd., '75

TABLE III-2

AVERAGE SAT MATH TEST SCORES, NATIONAL AND MASSACHUSETTS:
1971-72 TO 1974-75

Year	National	Massachusetts
1971-72	484	480
1972-73	481	481
1973-74	480	477
1974-75	472	469

Source: College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972

Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973

Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974

Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

TABLE III-3
ACHIEVEMENT TEST SCORE AVERAGES, MASSACHUSETTS:
1971-72 TO 1974-75

Year	Average For All Achievement Tests	English Composition	Math Level I	American History and Social Studies	Literature	Biology	Chemistry	French
1971-72	495	490	505	458	499	495	525	534
1972-73	498	495	504	467	N.A.	489	529	545
1973-74	504	493	510	473	504	508	536	561
1974-75	504	492	513	477	497	508	531	555

Note: N.A. indicates the information is not available

Source: Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

TABLE III-4
PSAT MEAN SCORES, MASSACHUSETTS,
1971-72 TO 1975-76

Year	PSAT Verbal	PSAT Math
1971-72	N.A.	N.A.
1972-73	N.A.	N.A.
1973-74	42.1	45.5
1974-75	41.5	45.2
1975-76	41.5	45.2

Note: N.A. indicates information not available.

Source: College Entrance Examination Board, New England Regional Office, 1976

Massachusetts score trends thus tend to mirror the national profile- sharp declines on the SAT verbal; less pronounced, but distinct, declines on the SAT math; little or no decline on the PSAT; and slight score increases on the Achievements. The major difference is that the SAT math scores and the Achievement Test scores are lower in Massachusetts than they are nationally.

B. Patterns by KOCs

While there has been a steady decline on the SAT scores in the State of Massachusetts as a whole, the extent of the decline may vary among schools in different kinds of communities (KOCs). In order to determine the extent of these differences, we obtained SAT scores from 1971-72 through 1974-75, from a sample of 43 public high schools in Massachusetts. This sample included high schools located within each of the following four different kind of communities (KOC's): KOC 1 - large cities; KOC 2 - industrial suburbs; KOC 3 - residential suburbs; and KOC 4 - other (small towns and rural communities).

Within each KOC, the schools were grouped according to the rate of change in their average verbal and math SAT scores between 1971-72 and 1974-75. For analysis purposes, three rate of change categories were utilized: 1) National rate of decline - the school's average SAT score decline was close to the national rate of 4.2% on the verbal and 2.4% on the math since 1971-72; 2) High rate of decline - the school's average rate of score decline was greater than 5.5% on the verbal and 3.5% of the math since 1971-72; 3) Low rate of decline or no decline - the school's average rate of score decline was less than 2.0% on the verbal and 1.0% on the math since 1971-72.

Table III-5 presents a cross-tabulation of the 43 high schools in our sample broken into the four KOC's by the three rate of decline categories. Table III-5 shows that, based on our sample, schools in residential suburbs have experienced considerably less score decline than schools in other Kinds of Communities.

Although other conclusions are less clear, due to the small size of our sample, it appears that urban schools are not experiencing as drastic declines as those in industrial suburbs and smaller towns. Interestingly, six of the twelve schools with high decline rates (or 50% of that group) are schools from small towns or rural areas (KOC 4). At the same time, however, 60% of all those schools in the sample which were located in industrial suburbs fell into the group with high rates of score decline since 1971-72. Conversely, when one examines the low-decline group one finds no schools from industrial suburbs within this category. Of the 14 schools with little or no decline, 10 (or 62%) are from residential suburbs.

We also examined whether rates of decline are related to absolute mean scores - in other words, whether schools with higher score averages experience different rates of decline than schools with lower scores. As shown in Table III-6, we found that the schools in our sample with a low rate of decline had an aggregate mean verbal scores of 453 in 1972-73, and 452 in 1974-75; schools in the national rate of decline category had mean verbal scores of 462 and 444 for these two years. Schools with high rates of decline had mean verbal scores of 436 and 400 for the same two years. Thus there is a clear difference between the mean verbal scores of schools with high rates of decline and other schools: the schools with

TABLE III-5
EXTENT OF SAT DECLINE IN MASSACHUSETTS BY KIND OF COMMUNITY
AND RATE OF DECLINE:

1971-72 to 1974-75

Kind of Community (KOC)	Schools with High Rate of Decline	Schools with National Rate of Decline	Schools with Low Rate of Decline	TOTAL
KOC 1 (Cities)	2 16.6% 50.0%	1 5.8% 25.0%	1 7.1% 25.0%	4 9.3%
KOC 2 (Industrial Suburbs)	3 25.0% 60.0%	2 11.7% 40.0%	0 0.0% 0.0%	5 11.6%
KOC 3 (Residential Suburbs)	1 8.3% 4.3%	12 70.5% 52.2%	10 71.4% 43.5%	23 53.5%
KOC 4 (other)	6 50.0% 54.5%	2 11.8% 18.2%	3 21.4% 27.3%	11 25.6%
TOTAL	12 27.9%	17 39.5%	14 32.6%	43 100.0%

Note: The first number in each cell is the number of schools in the sample. The second number is the column percentage. The third number is the row percentage.

Source: Massachusetts Department of Education, Bureau of Research and Assessment, 1976. Data compiled from information obtained from a sample of Massachusetts high schools.

TABLE III - 6

MEAN VERBAL SAT SCORES FOR SAMPLE OF MASSACHUSETTS HIGH SCHOOLS
BY RATE OF DECLINE CATEGORY: 1971-72 and 1974-75

Rate of Decline Category	Average Verbal SAT Score	
	1971-72	1974-75
Low Rate of Decline	453	452
National Rate of Decline	462	444
High Rate of Decline	436	400

Source: Massachusetts Department of Education Bureau of Research and Assessment, 1976, Data compiled from information obtained from a sample of Massachusetts high schools.

high decline rates show much lower mean scores for both years. According to our sample, Massachusetts schools which declined at the national rate had higher mean verbal scores in 1971-72 than schools which had a low rate of decline. By 1974-75, however, the schools with a national rate of decline showed lower mean verbal scores than schools which experienced little or no decline.

Mean scores for all Massachusetts high schools, broken down by kind-of-community, were available for the 1974-75 school year and are presented in Table III-7. This table reveals that schools in residential suburbs (KOC 3), where there has been the least decline, do in fact have higher score averages than schools in the other KOC's. The mean verbal score for schools in KOC 3 in 1974-75 was 441, 13 points higher for example than the mean score for KOC 4 (other communities). The average scores for schools in industrial suburbs (KOC 2) and cities (KOC 1) were both noticeably lower than the scores for schools in residential suburbs. However, this is consistent across both SAT tests (verbal and math) as well as all achievement tests for industrial suburbs only; the kind of community with the largest number of schools in the high decline category.

C. Comparisons Between Public and Non-Public Schools

As a further breakdown of Massachusetts trends, we analyzed the scores of 10 private and 10 parochial schools in the state, to determine whether their score trends differed from those of public schools. As was shown on the bottom of Table III-8, the SAT scores of students in Massachusetts private and parochial schools are somewhat higher than those of public school students. However, on the basis of our sample, it appears that the SAT scores of private and parochial school students are declining as rapidly

TABLE III - 7

MASSACHUSETTS MEAN SAT AND ACHIEVEMENT SCORES BY KIND
OF COMMUNITY: 1974-75

Kind of Community (KOC)	Rate of Decline Rank*	Verbal		Math		All Achievements	
		Mean	Rank	Mean	Rank	Mean	Rank
KOC 1 (Cities)	2	406	4	443	4	494	3
KOC 2 (Industrial suburbs)	4	411	3	446	3	477	4
KOC 3 (Residential suburbs)	1	441	1	482	1	509	1
KOC 4 (Other)	3	428	2	462	2	503	2

Note: * A rank of 1 indicates the KOC with the lowest rate of decline on the SAT since 1971-72.

Source: College Entrance Examination Board, New England Regional Office, 1975.

TABLE III - 8

MEAN SAT AND ACHIEVEMENT SCORES, MASSACHUSETTS PUBLIC SCHOOL SCORES ONLY
 COMPARED TO MASSACHUSETTS PUBLIC, PRIVATE AND PAROCHIAL SCORES COMBINED:
 1974-75

	Verbal	Math	All Achievements
Massachusetts Public Schools Only	429	462	503
All Massachusetts Schools (including public, private and parochial)	434	469	504

Source: College Entrance Examination Board, New England Regional Office
 1975.

as public school students' scores are.

Of the 10 private schools we sampled, only one reported a score increase between 1971-72 and 1974-75, and in that case the increase was only 10 points on the verbal and 20 points on the math. More typically, the schools reported declines of 30 to 50 points, comparable to the declines at many public schools. A typical private school, for example, had median scores of 530 (verbal) and 570 (math) in its 1972 graduating class; in the 1975 graduating class, the median scores were 505 (verbal) and 520 (math), a drop of 25 and 50 points respectively.

A survey of 10 parochial schools in Massachusetts showed that their students' scores are also declining. Although precise records were not available in all cases, administrators from at least 7 of the 10 parochial schools approached indicated that scores at their school had declined as much as public school scores. Although a fairly large proportion of the parochial schools surveyed reported dwindling enrollments, parochial schools with steady enrollments reported declines similar to those of schools with declining enrollments. Thus, it cannot be assumed that shifting enrollment patterns are having an important effect on scores. Furthermore, comparable score declines were reported in parochial schools serving college-preparatory students and in parochial schools with lower percentage of students pursuing post-secondary education.

DISCUSSION

The score decline in Massachusetts bears great resemblance to nationwide patterns. The SAT verbal and math scores are declining at the same rates

in Massachusetts as nationally. And, as around the country, Massachusetts Achievement Test scores have been rising slightly in recent years, while PSAT scores have changed little.

We have seen that the score decline in Massachusetts affects schools at all mean score-levels, in all kinds of communities, and of all types - public, private, and parochial. A partial relationship appears to exist between score levels and score-decline rates; schools with higher rates of decline were seen to have lower mean scores, although a perfect converse conclusion cannot be made about those schools in our sample that have average or below average rates of score decline. Similarly, in breaking down Massachusetts schools by kind-of-community, we found that residential schools show higher mean scores and lower rates of decline, but that no clear relation can be found between other kinds of communities and specific score patterns. Private and parochial schools are harder to assess than public schools, because the test-cohorts are smaller, and mean scores thus fluctuate more from one year to the next. But it is clear that the SAT-score decline is not confined to public schools.

Thus the decline on the SAT pervades different kinds of schools and different kinds of communities. In the next four chapters, we will explore hypotheses which might explain such a broad-based decline of test scores. These hypotheses focus on possible changes in the composition of the test itself, in the test-taking pool, in the schools, and in society as a whole.

CHAPTER IV

POSSIBLE EFFECTS OF CHANGES IN TEST SCALING AND CONTENT ON SCORE DECLINE

One set of hypotheses that has been discussed as a possible explanation for the test score decline is that the scaling, equating, structure and content of exams such as the SAT and ACT have changed during the past 10-12 years. Scaling and equating are two technical procedures used to insure that the difficulty of one test form is equal to that of others.¹ It is possible that the scaling and/or equating procedures that have been utilized on the SAT and ACT have resulted in the exams becoming harder over time. If this were the case, then a score of 520 in 1974-75 might be equivalent to a score of 550 or 560 ten years ago. At the same time, changes in the specific number and types of questions being asked on the tests may be influencing the way in which students are responding and therefore artificially creating test score declines.

Have there, in fact, been changes in the scaling and content of either the SAT and ACT that may account for the observed score decline? This chapter will discuss some of the national research in this area as well as present some findings from our interviews with a sample of Massachusetts public school administrators, students and college admissions counselors.

A. Scaling

In order to insure that the SAT and ACT exams are of comparable difficulty from one test year to the next, the questions are scaled annually. Should changes in scaling occur, this is referred to as score drift. After adjusting each year's average score for possible score drift, it might be possible for the test score decline to "disappear."

In order to test whether changes in the scaling of the SAT have resulted in score drift, ETS conducted a study of the stability of the SAT score scale. This study, which repeated identical sub-tests from the 1963 and 1966 forms in 1973, found a downward drift in the scaling of the SAT.² As Table IV-1 indicates, this downward drift meant that after adjusting for scaling changes, the actual (observed) average verbal score of 445 in 1973-74, based on the constant 1963 scale, is 430. On the mathematics exam, the actual average score of 481 for 1974-75 becomes 462 after adjusting for scaling changes. As a result of this score drift, the observed declines of 33 points on the verbal SAT and 21 points on the Mathematics SAT become 48 points and 40 points respectively. This research indicates that the actual decline on the SAT may in fact be greater than the observed decline since it appears the SAT has become easier between 1963 and 1973.

B. Equating

At the national level, researchers from both the Educational Testing Service (ETS) and the American College Testing Program (ACT) have indicated that until 1973-74 there were no appreciable structural modifications in the SAT or ACT that could help explain the score decline. Dr. Leo Munday, Director of Research for the American College Testing Program has written that "there have been no changes over the last 15 years in methods use for equating the ACT tests."³ Dr. James Braswell, ETS Coordinator of the SAT, has stated that: "each edition of the SAT is very carefully assembled to detailed statistical specifications that have remained relatively stable over the past 10 years."⁴

TABLE IV-1

COMPARISON OF MEAN OBSERVED AND CONSTANT (1963) - SCALE SAT SCORES

Year	Mean Observed Scores	Mean Scores in Constant (1963) Scale	Observed Decline	Corrected Decline
<u>Verbal</u>				
1963	478	478		
1966	471	465	7	13
1973	445	430	26	35
Total Decline			33	48
<u>Mathematical</u>				
1963	502	502		
1966	496	490	6	12
1973	481	462	15	28
Total Decline			21	40

Note: The constant-scale scores were estimated using calculations made by Modu and Stern (1975).

Source: Annegret Harnischfeger and David Wiley, Achievement Test Score Decline Do We Need to Worry?
Chicago: CEMREL, 1975. P. 21.

Since 1963, the number of test items on the verbal and mathematical components of the SAT have remained constant (90 questions on the verbal and 60 on the math). The percentages of the total verbal test items that are in the vocabulary, sentence completion and reading comprehension categories have been unchanged. There were some revisions in the format of the mathematical exams between 1963 and 1966 (more questions testing arithmetic/algebra concepts and quantitative comparisons and less questions examining geometric concepts). However, these changes have been proven to have had little, if any, effect on average scores.⁵

However, there was a major change in the structure of the SAT between 1973-74 and 1974-75. With the introduction of the Standard Test of Written English, the time allotted to students for completion of the SAT was decreased by 15 minutes. In addition, there was an increase in the number of antonyms on the verbal exam, with a concomittant decrease in the other verbal areas, and a substitution of quantitative comparison questions for data sufficiency items on the mathematical component.⁶ These changes occurred during the period in which the SAT decline was the greatest. Thus, they may account for some of the drop in average scores between 1973-74 and 1974-75.

C. Content

Finally, has the content of the SAT remained relevant to the high school curriculum? ETS has indicated that the equating process insures that questions are regularly updated (with a given question having a life span of about eight years) in order to maintain a constant level of difficulty

and to make sure the questions are relevant to the students' learning environment. At the same time, ETS claims that whatever curricular changes in English or Math that may be occurring in schools should have little effect on how well students do on the exams.⁷ The verbal portion of the SAT, ETS argues, is designed to examine reading skills and vocabulary that students develop from birth in and out of school. The math SAT tests skills that are cumulatively learned and hence not attributable to a specific curriculum.

The national assertion that the test items are successfully updated to be relevant, and that curricular changes should have little or no effect on student performance on the SAT, was not substantiated in Massachusetts. Discussions with a number of high school principals, college admission counselors, and students revealed a perceived discrepancy between the content of the exams and the programmatic emphases of schools. Students who were interviewed commented that "most of the vocabulary words were ones that are not used today" or "I had never seen or used most of the vocabulary words before." School personnel repeatedly stressed that to do well on the SAT, a student must have acquired a fairly sophisticated vocabulary, read extensively and been exposed to a variety of mathematical reasoning exercises. The fact that the content of the SAT has not changed appreciably while the school curriculum may have undergone a shift in emphasis from more advanced to more functional skills may have had an effect on student performance levels.

DISCUSSION

Representatives of ETS, CEEB and ACT strongly argue that factors inherent to the test do not account for the downward trend in performance. Yet, both

national research and local perceptions suggest some possible effects of equating and content relevance on score decline. While testing experts admit that changes in the structure of the SAT that took place in 1974-75 may have influenced score trends, local educators point to the diminished relevancy of the SAT as a prime contributing factor to the test score decline.

The CEEB national panel is conducting an in-depth study of the psychometric characteristics of the SAT and the results of their investigation should provide more conclusive evidence as to whether the test itself has influenced the score decline. Since little unique data concerning the nature of the test is available in Massachusetts, a state analysis of the examination itself is limited. However, hypotheses which attribute the decline in test scores to a change in the test-taking population can be analyzed from a local perspective. The following chapter addresses this issue.

Notes - Chapter 4

1. Leo A. Munday, Op. Cit., p. 2.
2. See Annegret Harnischfeger and David Wiley, Achievement Test Score Decline: Do We Need To Worry?, Chicago: Cemrel, Inc., 1975, pp. 20-21 for a discussion of this research. It was conducted for ETS by C. Modu and J. Stern.
3. Leo A. Munday, Op. Cit., p. 2.
4. James Braswell, ETS Coordinator for the SAT, letter to Dr. Sam Stewart of the Instruction Education Center, Ridgewood, N.J., outlining questions and answers concerning test score decline, unpublished letter dated July 16, 1975.
5. Annegret Harnischfeger and David Wiley, Op. Cit., p. 22.
6. Ibid.
7. James Braswell, Op. Cit.

CHAPTER V

CHANGES IN THE TEST-TAKING POPULATION

A second set of hypotheses to explain the score decline focuses on the effects of changes in the pool of students taking the test. Many of those observing the decline have thought, for example, that in recent years an increasing number of students have been taking such exams as the SAT. With an expanding pool, one would expect test-takers from increasingly diverse academic and demographic backgrounds. The pool then might be comprised of not only the most academically capable students in each school; this in turn could cause a change in the average scores.

Another change in the composition of the test-taking pool that is considered to have a negative effect on average scores is a drop in the number of students who take the exams as high school juniors and repeat the test as seniors. Since historically junior-year repeaters have shown an average gain of 30-35 points on the SAT, a sharp decrease in the number of repeaters would thus result in a decline in the average scores for all students.

In this chapter, available trend data on the composition of the SAT test-taking population for Massachusetts specifically will be presented. Data on such student characteristics as the number of test-takers, sex ratios, class-rank, grade point average, and post-secondary plans will indicate the extent to which the group taking the exam may have changed in recent years.

A. Absolute Number and Percentage of Test-Takers

One fundamental indicator of a changing pool of test-takers would be an increase over time in the percentage of all students taking the SAT. A trend showing that higher proportions of students have been taking the

SAT would probably indicate an increase in the number of lower academic achievers, on the assumption that as the test-taking population increases, it becomes less academically select.

Table V-1 shows that the number of high school seniors, nationally, who take the SAT at least once, has decreased, not increased, since 1971-72 (during a period of stable high school graduation rates). This table also indicates that the number of Massachusetts seniors taking the SAT decreased between 1971-72 and 1972-73 and has increased only slightly since then. Since 1971-72, the SAT test-taking population in Massachusetts has fluctuated between 5.3% and 5.7% of the total number of test-takers in the nation as a whole. As Table V-2 exhibits, the trends in the percentage of Massachusetts seniors taking the SAT decreased by 6.5% between 1971-72 and 1972-73 but has remained stable since then. National and Massachusetts trend data thus indicate that neither the absolute number nor percentage of students taking the SAT has increased during the past four years. This leads one to conclude that there has not been an increase in the size of the test-taking pool that can be related to the trend in SAT scores.

Patterns on the Achievement Tests further reinforce this conclusion. Nationally, the increase in average Achievement Test scores between 1971-72 to 1974-75 has been accompanied by a decrease in the percentage of students taking these tests from 36.2% to 22.9%. Although there has also been a drop in the number of students taking the Achievement Tests in Massachusetts, a significantly higher percentage of students in Massachusetts, as compared to students nationally, have been taking the Achievement Tests. For example, during 1974-75, 50% of the students in Massachusetts who took the SAT's also took the Achievement Tests while nationally the figure was only 22%.

TABLE V-1

NUMBER OF SENIORS TAKING THE SAT IN THE NATION AND MASSACHUSETTS:
1971-72 TO 1974-75

Year	Number of Seniors Taking the SAT		
	Nation	Massachusetts	Massachusetts as a % of National Total
1971-72	1,022,820	57,382	5.6%
1972-73	1,014,862	54,192	5.3%
1973-74	985,247	54,323	5.5%
1974-75	996,452	56,881	5.7%

Source: College Bound Seniors, 1971-72, College Entrance Examination Board, 1972

College Bound Seniors, 1972-73, College Entrance Examination Board, 1973

College Bound Seniors, 1973-74, College Entrance Examination Board, 1974

College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972

Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973

Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974

Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975

TABLE V-2

PERCENTAGE (%) OF MASSACHUSETTS HIGH SCHOOL SENIORS TAKING THE SAT:
1971-72 TO 1974-75

Year	Number of Seniors (public and non-public)	Number of Seniors Taking SAT (public and non-public)	% Taking SAT
1971-72	87,006	57,382	66.0%
1972-73	91,100	54,192	59.5%
1973-74	91,237	54,323	59.5%
1974-75	94,874	56,881	59.9%

Source: Fall Statistical Report, Division of Research, Planning and Evaluation, Massachusetts Department of Education, 1971, 1972, 1973, 1974.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972,

Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.

Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.

Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

At the same time, national Achievement Test averages have been 27-31 points higher than the Massachusetts scores.

Finally, trends on the PSAT shed light on the relationship between the size of the test-taking pool and the test-score trends. Since 1965, the total volume of PSAT test-takers nationally has remained relatively stable. Although the number of schools administering the PSAT has increased since 1971-72, when it became the basis for awarding National Merit scholarships, the number of students per school taking the examination has decreased. And, since 1971-72, the average PSAT scores has remained relatively stable.

In summary, it appears that where there have been decreases in the percentage of students taking the exam, there has been a concomitant increase or stabilization of test score trends. This suggests, as already noted, that the decline in SAT scores cannot be accounted for by an increase in the number and percentage of students taking the SAT.

B. Sex of Test-Takers

As Table V-3 indicates, the ratio of female to male SAT test-takers has increased steadily since 1971-72. For the nation as a whole, the percentage of female test-takers has risen from 49.8% to 50.1%. In Massachusetts, the percentage has risen from 49.3% to 50.9%. Thus, female students now comprise a slight majority of the SAT test-taking pool, particularly in Massachusetts where the percentage of female students has remained slightly higher than nationally.

Table V-4 presents average SAT verbal scores since 1971-72 for the nation and Massachusetts broken down by sex. The national male averages

Table V - 3
PERCENTAGE (%) OF FEMALE STUDENTS TAKING THE SAT, NATION AND MASSACHUSETTS:
1971-72 TO 1974-75

Year	Nation	Massachusetts
1971-72	48.8%	49.3%
1972-73	49.2%	49.9%
1973-74	50.0%	50.7%
1974-75	50.1%	50.9%

Source: College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.

Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.

Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.

Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

TABLE V - 4

AVERAGE SAT VERBAL SCORES BY SEX, NATIONAL AND MASSACHUSETTS
1971-72 TO 1974-75

Year	National		Massachusetts	
	Male	Female	Male	Female
1971-72	454	452	454	452
1972-73	446	443	446	442
1973-74	447	442	447	443
1974-75	437	431	436	432

Source: College Bound Seniors, 1971-72, College Entrance Examination Board 1972.
College Bound Seniors, 1972-73, College Entrance Examination Board 1973.
College Bound Seniors, 1973-74, College Entrance Examination Board 1974.
College Bound Seniors, 1974-75, College Entrance Examination Board 1975.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

have declined 17 points between 1971-72 and 1974-75 (from 454 to 437), a drop of 3.7%. In Massachusetts, the decline was virtually identical, with average scores falling 18 points (from 454 to 436), a drop of 4.0%. The national female averages on the verbal SAT declined 21 points since 1971-72 (from 452 to 431), a drop of 4.6%. In Massachusetts, the decline was 20 points (from 452 to 432), a drop of 4.4%.

Table V-5 presents average SAT math scores since 1971-72 broken down by sex. The national male averages have declined 10 points (from 505 to 495), a drop of 2.0%. In Massachusetts, there was a decline of 11 points (from 500 to 489), a drop of 2.2%. The national female averages on the math SAT declined 12 points (from 461 to 449), a drop of 2.6%. In Massachusetts the decline was 11 points (from 460 to 449), a drop of 2.4%.

Female scores have in fact been declining faster than male scores, and also have consistently averaged a few points lower. Yet, while female scores are declining more rapidly, and tend to be slightly lower than male scores, the differences between the two sex groups are not large enough to account for a significant part of the overall score decline. As shown by the figures, the scores among male students are declining on their own account, and at a rate too close to the drop among females to conclude that a change in the sex distribution is effecting the overall score decline.

C. Other Characteristics of Test-Takers

Several commentators have suggested that a possible decline in academic level of students presently taking the SAT could be accounting for the test score drop. Since 1971-72, the CEEB has collected data concerning such characteristics of test takers as their grade point average and

TABLE V - 5

AVERAGE SAT MATH SCORES BY SEX, NATIONAL AND MASSACHUSETTS:
1971-72 TO 1974-75

Year	National		Massachusetts	
	Male	Female	Male	Female
1971-72	505	461	500	460
1972-73	502	460	500	461
1973-74	501	459	495	459
1974-75	495	449	489	449

Source: College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

class-rank. This data is obtained through a Student Descriptive Questionnaire (SDQ), which is voluntarily completed by the student. The percentage of students filling out the SDQ has been significant (averaging about 80% of those registering for the ATP) and the reliability of students' responses has been found to be high. It is thus assumed that the SDQ results present an accurate profile of the SAT-taking population.

Tables V-6 and V-7 show that there has been no significant change in the average self-reported class-rank or grade point average of test-takers, either nationally or in Massachusetts. The percentage of students ranked in the top tenth of their class has decreased, but by only 2% since 1971-72, both nationally and in Massachusetts (Table V-6). Students' grade point averages have been increasing since 1971-72 (Table V-7), which hardly suggests that there has been an increased number of lower achievers filtering into an otherwise unchanged pool and dragging average scores down. It should be noted that there may have been grade inflation over this period, which would have to be considered in drawing conclusions concerning students' grade point averages. No data is available at present on the extent of this grade inflation. Nonetheless, even accounting for some grade inflation, there is no basis for concluding that an increasing number of academically weak or less well-prepared students are now taking the SAT. While the data does not allow one to totally dismiss the argument that such factors may be contributing to the score decline, they at least suggest that students' academic level is not a major determinant of the trend.

D. Junior/Senior Year Repeaters

Traditionally, students who repeated the SAT in their senior year, after having taken the exam as juniors, tend to do better the second time.

TABLE V - 6

SELF-REPORTED CLASS RANK OF SENIORS TAKING THE SAT IN THE NATION
AND MASSACHUSETTS
1971-72 TO 1974-75

Year	Percent In Top Tenth		Percent In Top Fifth	
	Nation	Massachusetts	Nation	Massachusetts
1971-72	24	NA	48	NA
1972-73	23	18	47	40
1973-74	22	17	48	39
1974-75	22	16	48	39

Note: NA indicates data not available

Source: College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

TABLE V - 7

ESTIMATED GRADE POINT AVERAGE OF SENIORS TAKING THE SAT, NATION
AND MASSACHUSETTS:
1972-73 TO 1974-75

Year	Nation	Massachusetts
1972-73	3.04	2.86
1973-74	3.06	2.81
1974-75	3.09	2.91

Source: College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
College Bound Seniors, 1974-75, College Entrance Examination Board, 1974.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

It has been hypothesized that the decrease in number of students who take the SAT as juniors in high school and then repeat the exam as seniors has been contributing to the score decline. Advocates of this position point out that with fewer repeaters, the increased scores that in the past have helped raise the average results are being foregone.

Information from deans of admissions in several Massachusetts colleges and universities indicates that there has not been a significant decrease in junior/senior year repeaters. At the same time, research conducted at the national level by Sam McCandless of the CEEB, shows that the number of students repeating the exam has not changed enough to affect overall score averages.² While the percentage of junior/senior year repeaters has been decreasing steadily since 1962, by an average of 2 percent a year, it has been estimated that the average score increase gained by repeating the test (about 15 points) is not sufficient to drag the average score down. In fact, that additional 15 points, if added to the scores of all non-repeaters, would only raise the overall score average by one-third of a point per year.

E. College Applicants

Many of the Massachusetts educators (high school principals, guidance counselors, and department heads) who were interviewed for this study indicated that in recent years there has been an increase in access to post-secondary institutions and, subsequently, a tendency for more students to apply to institutions of higher education, particularly to junior colleges and other two-year schools. Given the opportunity to pursue post-secondary education, educators feel that a larger, wider and less select pool of students are taking the college-entrance exams.

However, data from the Student Descriptive Questionnaire reveals little change since 1971-72 in the post-secondary plans of the high school students who take the SAT. Nationally, the percentage of students planning to obtain two-year or four-year degrees has remained stable while the percentage interested in graduate degrees has increased slightly (Table V-8). In Massachusetts, the percentage of test-takers aspiring to two-year degrees has decreased slightly since 1972-73, while the proportion planning to pursue bachelors and graduate degrees has remained virtually the same (Table V-9).

Data collected by the Massachusetts Department of Education (MDE) since 1968 on the distribution of high school graduates confirms this fact. MDE figures show no increase in the percentage of students attending post-secondary institutions, including two-year colleges. As Table V-10 indicates, the percentage of students going on to college hardly changed over the six year span.

Finally, interviews with admissions officers at several two-year state and private colleges in Massachusetts shed light on the number of students applying to their schools and the number of their applicants having taken the SAT. Admissions officers reported that both conditions had remained unchanged. That is, the number of applicants and the number of students taking the SAT have remained relatively stable over the past five years. This fact was corroborated by an examination of Massachusetts schools with different rates of score decline. As Table V-11 shows, fewer schools experiencing a high, rather than average or low, rate of decline also experienced an increase in the percentage of students planning to attend four year colleges. Thus, the hypothesis that schools with a high rate of decline would show a greater increase in the percentage of students planning to go to college since 1970-71 and thus

TABLE V - 8

POST-SECONDARY GOALS OF SENIORS TAKING SAT, NATION AS A WHOLE:
1971-72 TO 1974-75

Percent Planning To Pursue:

Year	Two-year degrees	Four-year degrees	Masters Degree	Graduate Study	Undecided
1971-72	7	30	19	16	25
1972-73	7	29	19	17	27
1973-74	7	29	20	18	26
1974-75	7	29	21	19	24

Source: College Bound Seniors, 1971-72, CEEB, 1972.

College Bound Seniors, 1972-73, CEEB, 1973.

College Bound Seniors, 1973-74, CEEB, 1974.

College Bound Seniors, 1974-75, CEEB, 1975.

TABLE V - 9

POST-SECONDARY GOALS OF SENIORS TAKING SAT, MASSACHUSETTS
1971-72 TO 1974-75

Percent Planning to Obtain:

Year	Two-year degrees	Four-year degrees	Master's degree	Graduate Study	Undecided
1971-72	N.A.	N.A.	N.A.	N.A.	N.A.
1972-73	10	30	19	12	29
1973-74	10	29	18	14	29
1974-75	8	30	20	14	27

Note: N.A. indicates the information is not available

Source: Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.

Massachusetts College Bound Seniors, 1972-73 College Entrance Examination Board, 1973.

Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.

Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

TABLE V-10

PERCENTAGE OF MASSACHUSETTS HIGH SCHOOL GRADUATES
 ATTENDING TWO-YEAR AND FOUR-YEAR COLLEGES:
 CLASS OF 1968 TO THE CLASS OF 1974

Year of Graduating Class	% Going On To Two-Year Colleges	% Going On To Four-Year Colleges
1968	17.0%	37.0%
1969	17.0%	38.0%
1970	17.0%	37.0%
1971	18.0%	36.0%
1972	17.0%	36.0%
1973	16.0%	36.0%
1974	16.0%	38.0%

Source: Distribution of High School Graduates, Massachusetts Department of Education, Division of Research, Planning and Evaluation, Class of June 1968, 1969, 1970, 1971, 1972, 1973, 1974.

TABLE V-11

PERCENTAGE (%) OF MASSACHUSETTS HIGH SCHOOLS WITH AN INCREASE
IN GRADUATES PLANNING TO ATTEND A 4-YEAR COLLEGE BY DIFFERENT
SAT DECLINE RATE CATEGORY

1970-71 TO 1974-75

	Schools with Low Rate of SAT Decline	Schools with Average Rate Of SAT Decline	Schools with High Rate of SAT Decline
Percentage of Schools with An Increase in Graduates Planning to Attend a 4-Year College	54.0%	79.0%	38.0%

Source: Distribution of High School Graduates, Massachusetts Department
of Education, Division of Research, Planning and Evaluation,
Class of June 1971, 1972, 1973, 1974.

a greater increase in the numbers taking the SAT are not confirmed by a local small scale verification.

Information from the Student Descriptive Questionnaire, Massachusetts follow-up data and interviews with college admissions Counselors thus seem to indicate that greater access to post-secondary education has not appreciably altered the nature and goals of the test-taking population. Hence, such factors appear not to be causing the test-score decline.

DISCUSSION

In this chapter, we looked at various aspects of the size and composition of the SAT test-taking pool. If any of these factors had showed dramatic trends, those patterns could have been considered likely causes of the declining score averages. Moreover, had such explanations of the decline been significant,

this would have suggested that the observed score decline is in some sense artificial, in that it merely represents a changing pool of test-takers, and not a growing discrepancy between what the SAT measures and how well students have mastered what is tested.

We have seen, however, that none of these factors--size of the pool, male-female ratio, academic standing, grade point average, number of junior/senior year repeaters or post-secondary aspirations--have significantly changed.

The absence of any significant trend in the size and composition of the test-taking pool indicates that the drop in the average SAT score is not the result of an increase in the number or percentage of low achieving students taking the test. This assertion is further justified by an examination of trends

since 1971-72 in the percentage of high and low SAT scores. As Table V-12 indicates, the percentage of scores above 600 has decreased from 11% to 8% nationally and from 11% to 7% in Massachusetts. Over the same period, the proportion of students scoring under 400 increased by 5% both nationally and in Massachusetts. The score decline is thus a result of a decrease in the proportion of high scorers (indicating diminishing achievement levels among the nation's academically superior students) as well as an increase in the proportion of low scorers. Hence, the score decline may be attributable to changes in the learning environment within schools which have affected how students learn and what they learn. In the next chapter, we will examine possible changes in the learning environment that could be contributing to the score decline.

TABLE V-12
PERCENTAGE (%) DISTRIBUTION OF SAT VERBAL SCORES:
1971-72 TO 1974-75

<u>NATIONAL</u>				
Score	1971-72	1972-73	1973-74	1974-75
Over 600	11.0%	10.0%	10.0%	8.0%
Under 400	32.0%	34.0%	35.0%	37.0%

<u>MASSACHUSETTS</u>				
Score	1971-72	1972-73	1973-74	1974-75
Over 600	11.0%	9.0%	9.0%	7.0%
Under 400	33.0%	35.0%	37.0%	38.0%

Source: College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
College Bound Seniors, 1972-73, College Entrance Examination Board, 1973.
College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
College Bound Seniors, 1974-75, College Entrance Examination Board, 1974.

Massachusetts College Bound Seniors, 1971-72, College Entrance Examination Board, 1972.
Massachusetts College Bound Seniors, 1972-73, College Entrance Examination Board, 1972.
Massachusetts College Bound Seniors, 1973-74, College Entrance Examination Board, 1974.
Massachusetts College Bound Seniors, 1974-75, College Entrance Examination Board, 1975.

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1. Annagret Harnischfeger and David Wiley, Op. Cit., p. 33.
2. Sam McCandless, "The SAT Score Decline and Its Implications For College Admissions", paper presented at the 1975 Western Regional Meeting of the College Entrance Examination Board, Unpublished Paper, January, 1975, p. 1.

CHAPTER VI

POSSIBLE EFFECTS OF SCHOOL FACTORS ON THE SCORE DECLINE

The discussion in the previous two chapters indicated that little of the test score decline can definitively be explained either by changes in the nature of the SAT exam or by changes in the size or composition of the test-taking pool. As a result, one must assume that the observed decline is a result of a real drop in student achievement levels on the kinds of skills and aptitudes measured by the SAT verbal and mathematics exams. This chapter will explore the extent to which such school-related factors as student motivation and attitudes; curricular offerings and course enrollments; teacher background; and attendance rates may be contributing to a decline in student achievement levels which in turn has affected performance on standardized tests.

Much of the evidence that will be discussed concerning school factors was obtained through interviews with a sample of Massachusetts high school administrators, guidance counselors, department heads and students. Thus, many of the conclusions that will be drawn are based on personal testimony and observations rather than "hard" data. Although statistics on school characteristics will be presented where available, this section draws heavily from the case study approach as a means of examining educational conditions.

One other caveat should be mentioned about the role of school-related factors in the SAT score decline: spokesmen for both ETS and CEEB state that student performance on the SAT should not be dependent on the quality of the teaching and educational programs school systems provide. For example, Dr. William Angoff, Director of Research for ETS, has written that the SAT "measures skills relatively independent of what a student is currently learning in a formal classroom curriculum."¹ Dr. Sidney Marland, President of CEEB, has said that:

The SAT was not designed as a measure of school performance and should not be used that way. To single out the schools as being responsible is unwarranted, unfair, and, scientifically unfounded.²

However, as mentioned before, the school is the setting within which students obtain most the skills and knowledge examined by the SAT; the evidence presented in this chapter will test whether major changes within the school environment over the past 10-15 years may have been a factor contributing to declines in test scores.

A. Student Motivation and College Admissions

In discussions with school personnel, it was frequently observed that there has been a change in students' motivation toward the SAT. These personnel gave the impression that students today are less worried or concerned about how well they do on the SAT than were students who took the test in the past. They believe that many students now feel this way because colleges are placing less emphasis on the SAT's than they did in the past.

In order to test this hypothesis, a sample of high school students and college admissions officers were interviewed, and a content analysis of college catalogues for two points in time was carried out, to determine whether admissions criteria have changed in recent years.

The students who were interviewed (members of the Student Advisory Council (SAC) to the Massachusetts Department of Education, representing a cross-section of high school students statewide) confirmed what the high school administrators had observed. The students said that while those of their peers interested in attending the most prestigious colleges worry

about the SAT and take it seriously, the average student does not think the results have much effect on college admissions.

Students said that they were aware that older students, from the graduating classes ahead of them, were getting into top universities with lower SAT scores than in previous years. They also indicated that high school and college counselors have told them that universities are de-emphasizing the SAT. One student said that he had had six college interviews and the SAT's were not discussed in any of them. This phenomenon has resulted, it appears, in an attitude succinctly expressed by one SAC member: "I'll get into college anyway, so why worry about the SAT's?"

How has this cavalier attitude actually affected student performance on the SAT's? It appears that present students are not overly concerned about how well they perform on the SAT's. This lack of commitment is often manifested in how the students prepare for the exam. Students who were interviewed indicated that many of their friends spend the night before the SAT at parties or other recreational activities. As a result, many students are taking the SAT's at less than peak intellectual efficiency and this condition may be effecting how well they achieve on the SAT. Others noted that they do not exert their best effort when responding to the questions. This, too, may be contributing directly to a decline in performance.

In talking to college admissions officers, and comparing admissions policy statements from recent and older college catalogues, we found definite evidence to justify the students' claim that SAT's are not as crucial a factor in college admissions as they were 10 years ago. A survey of admissions deans in eight private and public colleges and universities in Massachusetts revealed that the use of the SAT as a criterion for admissions has changed

since the mid-1960's. All of these institutions still require applicants to submit SAT scores; but these scores are not always reviewed as carefully, or in the same way, as they used to be.

We learned from many admissions officers that they do not use an applicant's SAT score to eliminate him or her from the applicant pool, but rather take it into account only if it works in the applicant's favor. Almost all of the admissions personnel said that the single most important criteria in evaluating students is not the SAT score, but high school grades. The current attitude of many colleges toward the SAT is evidenced in the following statement in a recent university catalogue: "College Board scores may be influenced by the student's previous experience with timed examinations, and these tests, of course, do not necessarily measure academic potential, and certainly not motivation or creativity."³

The change in attitude toward the SAT test was apparent when we compared the discussion of the exam for two different academic years in the catalogue of one college. The statement on the SAT appearing in the 1966-67 catalogue was as follows:

These tests provide information about each student's academic potential, and a standard basis for comparison of all candidates. (They) are used, with the school record and recommendations, to evaluate the applicant's qualifications.

In the 1974-75 version of the catalogue, the SAT appears to be given less prominent billing; after listing such admission criteria as grades, letters of recommendation, writing samples, and extracurricular activities, the statement simply concludes, "finally, the results of the required aptitude and achievement tests help to complete the picture."

We also contacted admissions officers in two-year state and private colleges in Massachusetts to see whether the SAT's are important in their student application evaluation process. For most two year colleges, SAT's are not compulsory. In many two-year state colleges, admissions are open, Where SAT's are required, they are often used for diagnosing student skills rather than for making admissions decisions. Thus, most students applying to two-year colleges, who take the SAT, do not need to worry that their scores on the exam will effect their chances of getting admitted.

Has the diminished importance of the SAT as a critieria for college admissions resulted in students getting accepted into institutions of higher education with lower SAT scores than in the past, as Massachusetts high school students have contended? In order to test whether colleges have been admitting students with lower SAT scores than in previous years, we obtained the mean SAT scores for different points in time from 10 Massachusetts colleges and universities. In almost every case, the mean freshman scores had dropped 20 to 40 points over the last 8 to 10 years, a trend consistent with the overall national and state decline during this period. At the same time, the high school class-rank and grade point average of the incoming freshman classes have remained fairly steady. These results further justify the belief among high school students that their performance on the SAT will not greatly affect their chances of getting admitted to college.

In summary, interviews with admissions officers and high school guidance counselors lead us to believe that the test has in fact become somewhat less important as a criterion for college admission-- that it "helps to complete the picture," rather than paint the basic profile of an applicant. If so,

then the changing student attitude toward the SAT is based on an accurate perception that the SAT is not as important a criterion for college admission as other factors.

B. Curricular Offerings and Course Content

Another school factor possibly affecting student test performance, which was continually raised in conversations with high school staff, is recent changes in curricular offerings, course content and enrollment patterns. The specific kinds of changes that were mentioned included:

- a decrease in the number of traditional academic courses students take, especially in the junior and senior years of high school.
- a vast increase in the number of elective courses, especially in English and Language Arts, that are both offered and taken.
- a de-emphasis on basic skills such as reading comprehension, vocabulary building, writing, and mathematical operations.
- a greater emphasis on the affective domain at the expense of cognitive areas.

A preliminary investigation of national trend data on curricular offerings and enrollments has been conducted by Harnischfeger and Wiley.⁴ Their analysis of trends in enrollment in subject areas (e.g., English-Language Arts, Mathematics, Social Studies) between 1970-71 and 1972-73, a period of only two years, showed a general enrollment drop in academic courses and a sizeable drop in the proportions of pupils registered for the college-preparatory subjects, such as English, algebra, first-year foreign languages, chemistry, and physics. For example, there was an 11% drop in enrollment in English courses, 7.5% in foreign languages, 7% in mathematics, and 6% in regular history courses. However, Harnischfeger and Wiley did not find a corresponding increase in vocational/business/home economics programs that would offset the drop in enrollment in traditional courses.

An analysis of available trend data on curricular offerings in Massachusetts secondary schools confirmed the national picture and provided insights into what students are substituting for traditional academic courses. The major finding was that as enrollment in traditional courses declined in Massachusetts, enrollment in specialized electives increased.

As Table VI-1 shows, between 1967-68, 1970-71, and 1972-73, the number of elective courses offered by high schools in the five basic subject areas (English, Mathematics, Social Studies, Science, and Foreign Languages) increased dramatically. For example, in English-Language Arts, the number of courses offered jumped from 51 to 127, a growth of 150%. The kinds of elective courses that schools are substituting for traditional academic offerings include: Popular Literature; Man; Victim or Hero; Photo Journalism; Escape to Fantasy; Pop Music; Eastern Religion; The Lost Generation; Sensitivity; Spiritualism and Witchcraft and Values.

Table VI-2 indicates that while there was an increase between 1967-68 and 1972-73 in school systems offering such non-traditional courses as Film-Making, Myth and Legend, and Science Fiction, there has been a decrease in basic courses such as World History, Reading, and English Language Arts. For example, the percentage of school districts offering Myth and Legend increased from 1.5% to 20.1% and the percentage offering Film Making jumped from 0% to 26.8%. During the same five-year period, the percentage of school districts offering English-Language Arts Grade 11 decreased from 77.5% to 68.7% and the percentage offering World History decreased from 75.0% to 54.4%.

In addition to changes in course offerings and enrollments, we found evidence of a reduction in student course loads. Many principals and counselors said that an increasing number of students now meet the minimal graduation

TABLE VI-1
TRENDS IN NUMBERS OF COURSES OFFERED BY SUBJECT AREA
IN MASSACHUSETTS SECONDARY SCHOOLS:
1967-68 TO 1972-73

Subject Area	Number of Different Courses Offered		
	1967-68	1970-71	1972-73
English/Language Arts	51	62	127
Mathematics	41	50	85
Social Studies/History	63	70	148
Foreign Language	53	65	83
Science	59	68	109

Source: Survey of Curricula Offerings, Massachusetts Department of Education, Division of Research, Planning and Evaluation, 1967-68, 1970-71, 1972-73.

TABLE VI- 2

TREND IN PERCENT OF MASSACHUSETTS SCHOOL SYSTEMS
OFFERING SPECIFIC HIGH SCHOOL COURSES:
1967-68 TO 1972-73

Course Name	% of Systems Offering Course		
	1967-68	1970-71	1972-73
World History	75.0%	73.6%	54.4%
Algebra-1st Course	79.8%	87.4%	97.8%
Computer Math	3.0%	21.4%	32.1%
Plane Geometry	41.9%	40.6%	73.6%
Latin-1st Course	74.1%	75.1%	67.8%
Reading (General)	52.8%	40.2%	33.5%
Film Making	0.0%	6.9%	26.8%
English Composition	15.7%	23.7%	39.7%
Myth and Legend	1.5%	13.0%	20.1%
English/Language Arts			
Grade 9	81.6%	92.7%	94.6%
Grade 10	81.2%	84.7%	84.8%
Grade 11	77.5%	78.1%	68.7%
Grade 12	79.4%	75.1%	62.1%
Novel	3.4%	13.4%	22.7%
Science Fiction	0.0%	0.4%	12.9%

Source: Survey of Curricula Offerings, Massachusetts Department of Education
Division of Research, Planning and Evaluation, 1967-68, 1970-71,
1972-73

requirements by the end of their junior year in high school, and only take part-time loads and/or substitute work-study or other alternative programs for rigorous academic courses in their senior year. Many principals observed that by relaxing certain course-load requirements, "we are contributing to the educational delinquency of certain students." While students may derive valuable experiences and skills from alternative programs, they are missing additional exposure to certain academic skills, particularly in the verbal areas, by no longer taking senior level academic courses.

Along with the enrollment trends discussed above, students we spoke with indicated that teaching techniques and course content had effected their preparation for the SAT. For example, students noted that there has been a de-emphasis of vocabulary and reading comprehension in English courses, and less stress on the four basic operations in math classes. They added that present courses often place a great emphasis on oral communication and the use of visual aids, the media, and pre-packaged learning "kits". The students felt that these curricular changes have reduced their abilities in reading, mathematical reasoning, and other basic skills that are examined on the SAT. The changing enrollment trends and curricular emphasis seem to indicate that there is a growing discrepancy between what students are learning and what the SAT is examining. As was discussed earlier (Chapter IV), the content and structure of the SAT has not changed appreciably during the past decade. The SAT still examines vocabulary, reading comprehension and mathematical reasoning. However, the public schools, particularly secondary schools, have been de-emphasizing the teaching of these basic verbal and mathematical skills. Schools have been placing greater

emphasis on specialized content areas, and the fostering of other skill areas such as creativity, decision-making and interpersonal relationships.

C. Teacher Characteristics

Some have argued that a possible contributor to test score decline is a changing teaching pool. Their contention is that current teachers are less experienced and/or qualified than teachers in the past. If present teachers are younger, have less years experience and have lower educational levels than teachers 5-10 years ago, this would imply that currently enrolled students are being taught by teachers less qualified and/or less experienced to prepare them for the material tested on the SAT. In order to see if there have been any significant changes in the characteristics of the teaching staff we examined trends in the average age, years of experience and educational levels of classroom teachers.

National data indicates that teachers in 1973 were, on the average, more highly educated than teachers in 1960.⁵ Furthermore, while the average years of teaching experience for instructional staff decreased nationally between 1960 and 1971 (from 13.3% to 8.0%), the average experience has been increasing since then due to declining enrollments and the economy.

In Massachusetts, an analysis of trend data on secondary school teaching staff between 1968-69 and 1973-74 (Table VI-3) shows that there was a slight decrease in average age and level of educational attainment of

TABLE VI - 3

CHARACTERISTICS OF SECONDARY SCHOOL TEACHERS IN MASSACHUSETTS:
1968-69 TO 1973-74

	1968-69	1969-70	1970-71	1973-74
Age	37.0	35.1	36.4	35.2
Yrs. in Current System	6.5	5.8	6.7	6.6
Total Yrs. Experience	8.5	7.8	8.6	10.7
Average Highest Level of Educa- tional Attainment	9.9	9.7	9.4	9.7

Note: Under Average Highest Level of Education Attainment,"
a "9" is equivalent to a Bachelors Degree and a "10"
is equivalent to a Bachelors Degree plus 30 credits.

Source: Professional Staff Survey, Massachusetts Department of
Education, Division of Research Planning and Evaluation,
1968-69, 1969-70, 1970-71, 1973-74.

teachers during that period and an increase in average years of teaching experience. Neither the national nor statewide information therefore indicates any change in teacher background characteristics that could be directly linked to declining SAT's.

A recent national survey, however, provides some data on changes among teacher attitudes, if not background characteristics.⁶ Data from the National Educational Association show that teachers nationally consider the development of students' emotional and interpersonal, rather than cognitive growth, a greater area of their responsibility than they did before. Such a shift in teacher orientation may be creating a different emphasis in the classroom and hence less stress on the basic skills required to perform well on such exams as the SAT.

D. School Attendance

It has also been speculated that changes in student attendance rates and attendance patterns have affected performance on the SAT. One hypothesis that has been raised is that the decrease in student drop-out rate has influenced the quality of instruction provided to higher achieving students. This, in turn, it is argued has affected the performance of students on the SAT.

Nationally, there has been a continuous decrease in the high school drop-out rate between 1950 and 1968. In 1950, 50% of all pupils dropped out of high school before graduation; by 1968, this figure diminished to 25% of all pupils and has remained at this rate ever since.⁷ The increased number of

students remaining in school (partly a result of the emphasis on drop-out prevention programs in the late 50's and early 60's) may have resulted in administrators, counselors and curriculum specialists switching their attention and services from the college-bound student to the low-achievers. The present college-bound students thus may not be receiving the same intensity or level of education as did students attending school during a time when the drop-out rate was higher. This possible shift in enrollment then may be contributing to how well college-bound students are being prepared for the SAT.

A second change that has been cited as related to the test score decline is a decrease in students' average daily attendance (ADA) rates. The ADA rate has declined nationally since 1966, while absentee rates have been increasing.⁸ The National Association of Secondary School Principals (NAASP) has pointed to absenteeism as "the most perplexing student problem, overriding all other areas even discipline."⁹

While no accurate data is available on state attendance rates in Massachusetts, several principals remarked that the absentee rates in their schools have been increasing since the late 1960's. For example, in one school average daily attendance has slipped from 93% to 88% of student enrollment; in another, from 95% to 85%. The decreasing attendance rates may be affecting student achievement in two ways. First, students are losing out on classroom instruction; secondly, teachers may not be covering a full year's curriculum because of time being spent on reviewing material missed by absent students.

E. Analysis of Variables by Rate-of-Decline

In order to determine further whether different rates of score decline are related to certain school factors, such as course offerings, course enrollments and teacher characteristics, we grouped our 43-school sample of Massachusetts high schools into three categories, according to their average rates of SAT score decline since 1971-72 (See Chapter III). As described in Chapter III, one of the three categories included 12 schools whose score declines were higher than the national average, another included 14 schools with rates lower than the national average, and the last group included 17 schools whose score declines were within 2% of the national average decline of 4.2%-verbal and 2.4%-math.

We then compiled and compared trend data for the schools within each category on the following variables: 1) total number of courses offered in English/Language Arts, Math and Social Studies/History; 2) enrollment in Science Fiction and Radio/TV/Film courses; 3) average age, years of experience and educational level of the teaching staff; 4) pupil-teacher ratios.

It was hypothesized that schools with a high rate of decline on the SAT would offer more elective courses in English/Language Arts, Social Studies and Math than schools in the other categories. A greater number of electives might indicate that students were substituting for traditional classes, courses that focussed less on the basic skills examined by the SAT.

Table VI-4a indicates that during 1975-76, schools with high rates of decline offered, on the average, fewer basic skill subjects than schools with a low or national rate of decline. Furthermore, as Table VI-4b shows, schools with a high rate of decline showed less dramatic increases between 1970-71 and 1975-76 in the percentage basic skill courses offered.

TABLE VI - 4a

AVERAGE NUMBER OF COURSES OFFERED IN ENGLISH/LANGUAGE ARTS,
SOCIAL STUDIES AND MATH IN SAMPLE OF MASSACHUSETTS HIGH
SCHOOLS GROUPED BY RATE OF SAT DECLINE: 1970-71 TO 1975-76

	Decline Rate Category	Average Number of Courses Offered	
		1970-71	1975-76
English/Language Arts	Schools with Low Rate of Decline	9	15
	Schools with National Rate of Decline	12	17
	Schools with High Rate of Decline	7	11
Social Studies	Schools with Low Rate of Decline	8	13
	Schools with National Rate of Decline	6	14
	Schools with High Rate of Decline	6	11
Math	Schools with Low Rate of Decline	13	13
	Schools with National Rate of Decline	15	14
	Schools with High Rate of Decline	10	10

Source: Survey of Curricula Offerings, Massachusetts Department of Education,
Division of Research, Planning, and Evaluation, 1970-71, 1975-76.

TABLE VI - 4b

PERCENTAGE (%) CHANGE IN AVERAGE NUMBER OF COURSES OFFERED IN
ENGLISH/LANGUAGE ARTS, SOCIAL STUDIES AND MATH IN SAMPLE OF
MASSACHUSETTS HIGH SCHOOLS GROUPED BY RATE OF SAT DECLINE:
1970-71 TO 1975-76

Decline Rate Category	Percent Change in Average Number of Course Offered		
	English/Language Arts	Social Studies	Math
Schools with Low-Rate of Decline	+66.6%	+62.5%	0%
Schools with National-Rate of Decline	+41.6%	+133.3%	-6.6%
Schools with High-Rate of Decline	+57.1%	+ 83.3%	0%

Source: Survey of Curricula Offerings, Massachusetts Department of Education,
Division of Research, Planning and Evaluation, 1970-71, 1975-76.

While the previous analysis did not show differences among schools with different rates of decline and rates of increase in traditional course offerings, it may still be true that schools with high declines showed greater increases in the number of students enrolled in specialized electives. Using two recently instituted elective courses as indices (Science Fiction and Radio/TV/Film), we compared enrollment figures in these courses for two years, 1972-73 and 1975-76.

Of the 15 schools with little or no decline over this period, we found that only one showed an increase in enrollment for these courses. All of the other low decline schools showed either marked reductions in enrollment for these two electives or did not offer these courses. However, a significant percentage of schools in both the average and high rate of decline categories showed an increased enrollment since 1971-72 in both these courses. Forty-two percent (42%) of the schools in the average rate of decline category and thirty-three percent (33%) of the schools in the high rate of decline group followed this trend. Thus, there appears to be some association between increased enrollment in specialized electives and rate of SAT decline among the Massachusetts high schools in our sample.

Analysis of such staff characteristics as average age, average years of experience and highest education level attained for schools within each rate of score decline category did not indicate any significant differences in staffing patterns. As Table VI-5 shows, the average age of teachers for schools in all categories during 1973-74 was approximately 35.0 years; the average number of years of experience was between 10 and 11; and the highest level of education attained was a bachelors degree with some graduate work. The general conclusions reached previously about the

TABLE VI - 5

SELECTED TEACHER CHARACTERISTICS FOR SCHOOLS IN DIFFERENT SAT
DECLINE RATE CATEGORIES:
1973-74

	Schools With Low Rate of SAT Decline	Schools With Average Rate of SAT Decline	Schools With High Rate of SAT Decline
Average Age of Teachers	35.3	34.8	34.9
Average Number of Years of Experience	10.8	10.2	10.3
Average of Highest Educational Level Attained	10.0	10.1	9.7

Source: Professional Staff Survey, Massachusetts Department of
Education, Division of Research, Planning and Evaluation,
1973-74.

teaching staff seem to be confirmed by this small scale verification; that is there are no differences in teaching staff characteristics among schools with differing rates of SAT decline that could be linked to this phenomenon.

Finally, we examined whether there were differences in the pupil-teacher ratios of schools with varying rates of score decline. As Table VI-6 indicates schools with low rates of decline had a lower pupil-teacher ratio (19.2:1) than schools in the national or high rate of decline categories (20.5:1 and 19.8:1 respectively). However, this difference is not significantly large enough to be linked conclusively to the score decline.

DISCUSSION

As has been pointed out, there may have been significant changes since the early 1960's in such school conditions as curriculum trends, program emphasis, and student attendance rates. The declining scores on the SAT and other standardized tests have stimulated many schools to re-examine their curricular offerings and academic policies. In Massachusetts, administrators are initiating the following: 1) introduction of special Reading and English Composition classes and laboratories; 2) reintroduction of requirements of standardized courses, particularly of English grades 10, 11, and 12; 3) discussion and development of high school competency standards in conjunction with the national movement toward "minimum standards" for high school graduation; 4) stricter attendance and grade-promotion policies.

These revised programs and policies show that, despite the claims by CEEB and ETS that the SAT test is not "curricula-bound," school personnel have begun to seriously question and revamp their programs as a result of the decline of scores on the SAT and other standardized tests.

TABLE VI - 6

PUPIL-TEACHER RATIO FOR SCHOOLS IN DIFFERENT SAT DECLINE
RATE CATEGORIES;
1973-74

	Schools With Low Rate of Decline	Schools With Average Rate of Decline	Schools With High Rate Of Decline
Pupil-Teacher Ratio	19.2:1	20.5:1	19.8:1

Source: Fall Statistical Survey, Massachusetts Department of
Education, Division of Research, Planning and Evaluation
1973-74.

The data presented seems to suggest good reason for this trend. The analysis which was conducted comparing Massachusetts schools grouped by rate of SAT decline by a number of school-related variables indicated that percentage of students enrolled in specialized electives was highly related to high score decline.

While new student attitudes toward high school and college, new ways of learning, new areas of study, and changing attendance patterns can all be considered as factors contributing to the score decline, it is also necessary for researchers to address the changes that have taken place in American society, which although difficult to quantify, have certainly been considerable. These changes in the social milieu have influenced students both in and out of school, causing many of the changes within the school, and also affecting the lifestyles and learning patterns of students outside of the classroom. Some of these social factors will be discussed in the next chapter.

Notes - Chapter 6

1. William Angoff, "Why The SAT Scores Are Going Down", English Journal, March 1975.
2. Sidney Marland, as reported in The College Entrance Examination Board's Publication, ATP News, January, 1976.
3. The names of the colleges whose catalogues have been quoted will not be revealed. The college officials who provided information for this study were assured that it would be reported anonymously.
4. Harnsichfeger and Wiley, Op. Cit., p. 88.
5. Ibid. pp. 100-104.
6. National Education Association, Highlights of Selected Questions From Teacher Opinion Polls and Survey of NEA Members, 1970-71, Washington, D.C.: National Education Association, 1971.
7. Harniscfeger and Wiley, Op. Cit., p. 82.
8. Ibid., p. 84.
9. National Parent Teacher Association (NPTA), "Where Have All The Students Gone?" (Leaflet), Chicago: NPTA, 1975.

CHAPTER VII
CHANGES IN THE SOCIAL AND CULTURAL
CONTEXT OF EDUCATION

Another set of hypotheses that has been raised to explain the score decline centers around the social and cultural context within which the educational system operates. Among the general societal changes that have been conjectured as affecting education are: the expanded role of the electronic media, and especially television; increased use of alcohol and drugs by students; the social upheaval of the 1960's, and its impact on students' attitudes; and the increased number of younger siblings taking the SAT test during the past decade. Many educators argue that these social changes have created an anti-intellectual mood, altered students' lifestyles and their patterns of socialization and hence effected their performance on standardized tests. The validity of these arguments will be examined here in light of available national and local data.

A. Expanded Role of the Media

Almost every educator interviewed in Massachusetts cited television as having a negative effect on student achievement. Given the fact that the average American child spends a total of 15,000 hours in front of a TV set, and only 12,000 hours in classrooms, according to U.S.¹ Commissioner of Education Terrel Bell, this is not surprising. While TV may have a positive educational value for younger children- up to age 7 or 8- it seems, for older children, to be a hinderance to intellectual growth. Commissioner Bell has stated that TV is a major pollutant of the "learning environment" in that it "panders to the lowest common denominator of public taste."²

If television is in fact harmful, it is for a variety of inter-

related reasons. TV competes with schoolwork and other learning activities for the average child's free time--and often wins. The instant, prepackaged entertainment which it provides may breed habits of reliance upon, or expectation of, instant gratification and escape. Furthermore, many school personnel believe that TV encourages mental laziness and passivity; TV shows often require little or no thinking on the part of the viewer, and as one guidance counselor put it, "students' minds can go flabby" on such a diet. Others have observed that the condensed, action-packed drama of TV shows makes school and studying seem dull by comparison--and yet these shows fail to provide a positive self-image for teenagers.

It would be very difficult to determine the precise extent of television's impact on learning ability. But the advent of television has certainly been the single most radical change in the "learning environment" in the last few decades, and its influence on the way young people think and grow can hardly be exaggerated. When one considers the alternative activities which TV displaces-- such as reading and writing, sports, conversation, and contemplation-- one might be tempted to agree with the teachers and educators who feel it is an important contributor to declining achievement.

B. Increased Use of Alcohol and Drugs

There is also evidence that high school students, over the past decade, have been consuming increasing amounts of alcohol and soft drugs-- primarily marijuana--in and out of school. This represents a major change

in the lifestyle of the last generation of high school students, a change which roughly coincides with the beginning of the test score-decline. It is quite plausible that the degree of alcohol consumption and drug usage is affecting the learning process. Consumption of alcohol and marijuana have become an important status-oriented activity among high school students. Drinking, as one expert on alcohol-abuse told us, is "perceived by high school students as the colorful thing to do."³ If a significant proportion of junior and senior high school students are continually or frequently under the influence of alcohol or drugs, this might have a detrimental effect on their ability to retain information provided in class.

Computerized surveys of drug and alcohol usage in Massachusetts high schools have been conducted in recent years by the Division of Drug Rehabilitation of the Massachusetts Department of Mental Health. These surveys show increases in both alcohol and drug consumption of significant, but not vast, proportions.

The greatest trend, according to students answering a questionnaire in 62 sample high schools in Massachusetts, has been an increase in marijuana consumption. In answer to the question, "Do you now use marijuana?" 29% of the students answered "yes" in 1972, while 72% said "no". In 1975, however, the number answering "yes" had climbed to 42%, while the number answering "no" decreased to 58%--a 13% difference in just three years. Interestingly, the number of intensive marijuana-users appears to have decreased between 1972 and 1975, despite the increase of overall users: in 1972, 15% said they smoked "frequently"--once a week or more--while in 1975, only 12% said they were frequent smokers.

However, despite the rise in general marijuana consumption, the Massachusetts Department of Mental Health survey findings indicate that there has not been increased in-school use. In fact, the number of students saying they had "ever been high in school" decreased by one percentage point, from 51% to 50%, over the three-year span. (Nevertheless, this figure is undoubtedly higher than the percentage of in-school smokers in the mid-1960's).

As for hard-drug use, the findings of the Massachusetts Department of Mental Health show a slight increase over the 1972-1975 period, of about 2% of the student population. 30% of the students responding in 1972 said they currently used hard drugs with any frequency, and 32% gave the same answer in 1975. However, the percentage who said they had taken hard drugs "within the last year" climbed from 41% to 53%, and the number of students indicating they had "ever taken heroin" increased from 1% to 5% of the total student population surveyed. These figures represent a cross-section of Massachusetts high schools, excluding those within the city of Boston.

The findings on alcohol consumption show moderate increases in the extent and frequency of high school drinking between 1972 and 1975. The number of students stating that they drink alcoholic beverages frequently (weekly or more) rose over this period from 24% to 34% of all students questioned. Frequency of in-school drinking has also increased slightly; but it still does not appear to be of epidemic proportions in Massachusetts, as less than 1% of the respondents, in either year, said they were actually intoxicated in school more often than once a month.

Several other surveys, such as the one conducted by the National Highway Traffic Safety Administration, also reveal a significant rise in the number of high school drinkers over the last 15 years. The NHTSA poll, completed in 1974, found that nationwide, over 20% of all high school students said they drink alcoholic beverages once a week or more. The poll concluded that drinking teenagers "represent all levels of scholastic achievement and aspiration."⁴

The number of arrests of minors for alcohol-related offenses increased nationally by 135% between 1960 and 1973; over the same 13 year span, the number of minors charged with drunken driving increased 400%. In addition, the number of teenage members of Alcoholics Anonymous in Boston tripled over the last five years, according to an A.A. spokesman in Boston.

C. Birth Order

Another social factor that has been cited as accounting for the score decline is the population cycle. Robert B. Zajonc, a psychologist at the University of Michigan Institute for Social Research, has posited the theory that the score decline can be attributed to the fact the younger siblings of the baby-boom are now taking the test.

Zajonc contends that the intellectual environment of a family, which is a contributing factor in determining a child's intelligence, is largely influenced by the number and ages of the family members. For example, an only child, or an eldest child, is born into an optimal intellectual environment, receiving the full attention of the parents, and without other small siblings to dilute the overall level of the family environment. The more children, or the more closely bunched they are in

age, the less desirable is the intellectual environment. As Zajonc puts it, "the intellectual level of each additional child is diluted by his contact with young siblings, who have not yet reached full adult intelligence."⁵

Zajonc points out that the average birth order of the student taking the SAT test in 1963 was 2.4; in that year, the average score was 490. In 1974, the average birth order of test-takers was 2.9, and the score average had dropped to 460. Zajonc also cites evidence that the IQ's of twins tend to be lower than those of non-twins, and triplets' IQ's are on average even lower. And children who grow up in extended families--for instance, in households including a grandparent-- are advantaged, and likely to develop higher IQ's, while children from single-parent homes are handicapped. Long intervals between births seem to benefit all siblings: the older ones for having more time to enjoy the benefits of a smaller family, and the younger ones for thus having older and wiser siblings.

Finally, Zajonc believes he has discovered the reason why female scores have been lower than male scores: statistics show that, since 1950, males have shown a slight, but consistent, tendency to be born ahead of females in birth order.

The "Zajonc Theory" appears to have received national attention. The assumptions it makes concerning the relation between birth order and intelligence have been proven conclusively by several European studies--one in France and another in Holland--in each case using a very large sample, of 80,000 or more children. A further examination of this theory would call for a test of how highly a student's Intelligence Quotient correlates with

his or her SAT score, and whether that level of correlation has remained constant over the last 15 years.

DISCUSSION

The factors that have been discussed in this chapter as possible causes of declining test scores are by their nature less tangible and quantifiable than the factors previously examined. Yet they are hypotheses which, if valid, signify very broad and fundamental changes in the social context within which high school students live and learn. Television, marijuana, and alcohol have become fixtures in the lives of many students, whereas fifteen years ago they were much less prevalent.

We have attempted to show, in this chapter, that these factors--drugs, alcohol, and television, are difficult to diagnose and remedy, but must be acknowledged as having considerable effect on students and schools, and thus possibly on aptitude scores. If, as many educators believe, there has been a general laxity of educational standards in recent years, it would be reasonable to conclude that these influences are among the causes of that trend, and that declining test scores might be one of the results.

Notes - Chapter 7

1. Education USA, February, 1976, p. 423.
2. Ibid.
3. Interview with Priscilla Parrish Educational Coordinator, New England Institute of Alcohol Studies, May 1976.
4. "Young People and Alcohol," Alcohol Health and Research World, Summer, 1975, pp. 2-10.
5. Carol Tavris, "The End of the I.Q. Slump", Psychology Today, April 1976, pp. 69-74.

CHAPTER VIII

CONCLUSIONS

An examination of the national score decline trend from a state perspective provides additional information concerning the extent of the phenomenon. While the data collected indicates that patterns in Massachusetts parallel national trends, it also indicates that the declines on the SAT have occurred in different types of public schools as well as in parochial and private schools. Furthermore, local data seems to suggest a relationship between score levels and score-decline rates: schools with higher rates of decline were seen to have lower mean scores.

The state analysis also lends further substantiation concerning the significance of certain hypotheses explaining the causes of the score decline trend. From the Massachusetts data we learn that there have not been any major changes in the size or composition of the SAT test-taking population that could account for a significant proportion of the score decline. The trends on the male/female student ratios, class rank, grade point average, junior/senior repeaters and post-secondary aspirations of the test-taking pool which were examined indicate that these characteristics of the students registering for the SAT have remained relatively stable since 1971-72. Yet, the following conditions seem to be influencing student performance on the tests:

1. The apparent de-emphasis on the SAT as a primary criteria for college admissions has caused present high school students to be

less concerned about how well they perform on the test as compared to students previously taking the exam. Students' lack of motivation to do well on the SAT appears to be a contributing factor in the score decline.

2. There have been significant changes since the mid 1960's in the curricular offerings and course content of secondary schools. Specifically, there has been a major increase in enrollment in specialized electives and a simultaneous de-emphasis on basic communication skills in traditional courses. Consequently, there appears to be a growing discrepancy between the material examined on the SAT and the dominant thrust of students' program content. This discrepancy seems to be a contributor to the score decline.

3. There have been changes since the mid-1960's in student attendance patterns (lower drop-out rates, higher absenteeism) that may help to explain some of the test score decline.

On the other hand, the Massachusetts analysis indicates that certain nationally posited hypotheses regarding score decline might not be significant causes for the trend. For example, state data suggests that there have not been changes in the background characteristics of classroom teachers that could be considered major factors influencing the score decline.

DISCUSSION

In 1975, a national seminar was conducted to examine test score declines. The conclusion of that conference was that the trend was pervasive and serious. The conferees noted that "at a time when the world's gross supply of knowledge is calculated to be

doubling every decade, children in school seem to be learning less,¹ and the decline in learning is becoming increasingly critical."

Through a more specific and controlled setting than most national studies, this state analysis was able to provide data which reinforces the conclusion of the 1975 seminar. Local data confirms the fact that the decline is a result of a real and significant drop in student achievement on the kinds of skills and knowledge measured by exams such as the SAT. Such factors as changes in the scaling and content of the SAT and changes in the test-taking population could only account for a small proportion of the decline. Changes in student motivation, course enrollment and the school curriculum are speculated to be more major contributors to the trend. In fact, the effects of recent changes in the curriculum have already been recognized by many educators as a factor in the achievement decline, as evidenced by comments made by many Massachusetts administrators regarding the need to re-emphasize basic skills and establish minimum educational standards.

However, the causes for the decline in student achievement cannot be assigned to one factor or set of factors. It is the result of the interaction among the many technical, school and societal conditions which have been discussed in this report as well as others that were not researched for this study. There are several areas that still need to be examined in order to have a more complete understanding of the extent and causes of the test score decline. Some of these research areas include: 1) An analysis of trends on the SAT and other tests by grade point average, class rank and educational goals of the test-takers. Such research would

indicate whether certain kinds of students are experiencing greater declines than other students. 2) An analysis of trends on the SAT and other tests by specific subskills being examined. This research could be used to discover whether student achievement levels are dropping in some skill areas but not others. 3) An analysis of how students use their time outside school (e.g. the kinds of books they read, the amount of time they devote to homework) in order to better assess the effects of the social context of the public schools.

POLICY IMPLICATIONS

It has been pointed out by John Maguire, the Director of Admissions at Boston College, that students today may not be less knowledgeable than before, but rather may command different² skills. Maguire indicates that this could be a good thing-- that students today, while less verbally adept, are cleverer, more creative, and more critical thinkers than their predecessors. Several of the guidance counselors that we spoke to also said that students are not "spoon-fed" now, and are thus more self-reliant and able to make decisions. However, Maguire concludes that even though present students may have better "affective abilities" and a "more relaxed attitude toward learning and self-improvement" than former students, he and other educators need to be concerned about the precipitous drop in student reading, writing and computational abilities.

The new teaching techniques and tools that have appeared in the last few years have revolutionized the classroom. They bear great potential for making learning a more efficient and a more exciting process. But they also displace more orthodox methods and subjects, which are necessary for a student to master the English language and the basic principles of mathematics. For example, the proliferation of calculators and computers in high schools may contribute to a decline in students' ability to do hand-calculations of the basic operations, a necessary skill for the math SAT.

It is not our purpose here to suggest what the best balance would be between these different ways of teaching. But our evidence indicates that there is a discrepancy between the dominant trend in the secondary school curriculum and the material tested by the SAT. This discrepancy may be an important factor in the score decline that should be examined by administrators at all levels of educational policy-making.

Notes - Chapter 8

1. The Decline in Achievement, 1975,
A Report from the Edison Foundation
and IDEA
2. John Maguire, "That Which Comes Down,
Must It Go Up?:" The Decline of the
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